QC ABSTRACT

NAME OF WORK: Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	PCC(M15)	Compressive Strength(7days and 28days)	1 set /1-5 cum	3	2	2
8	RCC(M20)	Compressive Strength(7days and 28days)	4 set /31-100 cum	31.5	8	8
9	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1

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10	BM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
11	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
12	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
13	TACK COAT	Rate of spread	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2022-07-05-09** **Date: 13-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP,
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer's Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-06-2022
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 (RA 2021) DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, (RA 2018) Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, (RA 2019) Determination of Soundness, Clause 5, Clause 6 IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, (RA 2019) Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11, (RA 2019)DETERMINATION OF DENSITY , Clause 6
Date of test	:	11-06-2022
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.95	–
2	Finess by Air permeablity method (m^2/kg,Min)	285.3	225m^2/kg, Min
3	Density (gm/cc)	3.14	–
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	150 minutes	Not less than 30 minutes
6	Final Setting time	245 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

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All information furnished by Customer/Representative

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Technical Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2022-07-05-09** **Date: 09-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer's Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-06-2022
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, (RA 2019) Determination of Compressive Strength, Clause 6
Date of test	:	11-06-2022
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	59.0N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-07-05-09** **Date: 13-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer's Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	10-06-2022
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	10-06-2022

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	211	211	1.4	98.6	90-100
3	20 mm	7355	7566	50.4	49.6	30-70
4	10 mm	4219	11785	78.6	21.4	10-35
5	4.75 mm	2855	14640	97.6	2.4	0-5
6	Pan	360	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-07-05-09** **Date: 13-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.6	
3	Specific Gravity	2.69	_
4	Bulk Density(Loose) (Kg/l)	1.54	_
5	Bulk Density(Compacted) (Kg/l)	1.58	_
6	Water Absorption(%)	0.24	_

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-07-05-09** **Date: 13-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-06-2022
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	10-06-2022

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	248	248	5.0	95.0	90-100
3	10 mm	2188	2436	48.7	51.3	25-55
4	4.75 mm	2285	4721	94.4	5.6	0-10
5	Pan	279	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-07-05-09** **Date: 13-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	8.9	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.4	
3	Specific Gravity	2.62	_
4	Bulk Density(Loose) (Kg/l)	1.42	_
5	Bulk Density(Compacted) (Kg/l)	1.48	_
6	Water Absorption(%)	0.35	_
7	Aggregate crushing Value(%)	24.8	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	25.1	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-07-05-09** **Date: 13-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 10-06-2022

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2021
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 10-06-2022

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	21	21	2.1	97.9	90-100	90-100	90-100	95-100
3	2.36 mm	185	206	20.6	79.4	60-95	75-100	85-100	95-100
4	1.18 mm	211	417	41.7	58.3	30-70	55-90	75-100	90-100
5	600 micron	158	575	57.5	42.5	15-34	35-59	60-79	80-100
6	300 micron	236	811	81.1	18.9	5-20	8-30	12-40	15-50
7	150 micron	146	957	95.7	4.3	0-10	0-10	0-10	0-15
8	Pan	43	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-07-05-09** **Date: 13-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.42	_
2	Specific Gravity	2.53	_
3	Material finer than 75 micron(%)	3.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST RESULTS OF STEEL

Lab ID	:	**CP-2022-07-05-09** **Date: 13-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer's Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-06-2022
Sample Type	:	Sunvik
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2019.
Date of test	:	11-06-2022

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2022-07-05-09** **Date: 15-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer's Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-06-2022
Sample Type /Size	:	Precast Cover Slab (100 mm Thick)
Reference to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete
Date of test	:	10/06/2022

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-05-09** **Date: 25/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-06-2022

Customer ID : Drain Bottom Raft

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 25/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Raft	M20	18/06/2022	25/06/2022	149.34 X 149.43 X 151.53	22316	8.593	411.2	18.4	18.3
2	Drain Bottom Raft	M20	18/06/2022	25/06/2022	151.10 X 150.64 X 149.87	22763	8.727	423.2	18.6	
3	Drain Bottom Raft	M20	18/06/2022	25/06/2022	149.89 X 150.07 X 149.55	22495	8.349	405.0	18.0	

* The results obtained are satisfactory as per standard requirements.

Note:

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-05-09** **Date: 25/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-06-2022

Customer ID : Drain Bottom Raft

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 25/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Raft	M20	18/06/2022	25/06/2022	149.21 X 150.33 X 149.21	22431	8.913	404.5	18.0	18.2
2	Drain Bottom Raft	M20	18/06/2022	25/06/2022	150.32 X 149.71 X 151.70	22504	8.582	412.1	18.3	
3	Drain Bottom Raft	M20	18/06/2022	25/06/2022	150.01 X 149.29 X 151.19	22395	8.946	408.6	18.2	

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-05-09** **Date: 27/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 21-06-2022

Customer ID : Drain Side Wall

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall	M20	19/06/2022	26/06/2022	151.65 X 149.92 X 149.89	22735	8.419	430.1	18.9	18.8
2	Drain Side Wall	M20	19/06/2022	26/06/2022	151.87 X 150.30 X 152.00	22827	8.459	429.4	18.8	
3	Drain Side Wall	M20	19/06/2022	26/06/2022	151.42 X 150.70 X 149.69	22820	8.876	424.4	18.6	

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-05-09** **Date: 27/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 21-06-2022

Customer ID : Drain Side Wall

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall	M20	19/06/2022	26/06/2022	150.11 X 151.67 X 149.61	22768	8.218	428.2	18.8	18.8
2	Drain Side Wall	M20	19/06/2022	26/06/2022	151.69 X 149.44 X 151.12	22669	8.944	418.7	18.5	
3	Drain Side Wall	M20	19/06/2022	26/06/2022	151.18 X 150.47 X 151.53	22748	8.324	431.9	19.0	

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-05-09** **Date: 22/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 17-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 22/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	15/06/2022	22/06/2022	150.04 X 150.87 X 151.55	22636	8.387	274.1	12.1	12.5
2	PCC	M15	15/06/2022	22/06/2022	149.87 X 151.46 X 151.76	22699	8.166	287.5	12.7	
3	PCC	M15	15/06/2022	22/06/2022	150.42 X 151.02 X 149.12	22717	8.491	287.2	12.6	

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2022-07-05-09** **Date: 08-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 06-06-2022

Type of Mix : WMM (Wet Mix Macadam)

Date of Test : 06-06-2022

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	345	345	3.1	96.9	95-100
22.4	2329	2674	24.3	75.7	60-80
11.2	2379	5053	45.9	54.1	40-60
4.75	2373	7426	67.5	32.5	25-40
2.36	1621	9047	82.2	17.8	15-30
0.6	623	9670	87.9	12.1	8-22
0.075	1208	10878	98.9	1.1	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 08-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-2022
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	06-06-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 08-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-2022
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	06-06-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

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TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2022-07-05-09** **Date: 20-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 18-06-2022

Type of Mix : BM-Plant (Bituminous Macadam)

Date of Test : 18-06-2022

Weight of Sample(gm) : 5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	300	300	6.0	94.0	90-100
13.2	1350	1650	33.0	67.0	56-88
4.75	2500	4150	83.0	17.0	16-36
2.36	350	4500	90.0	10.0	4-19
0.3	50	4550	91.0	9.0	2-10
0.075	100	4650	93.0	7.0	0-8
PAN	350	5000	100.0	0.0	0

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID : **CP-RW-2022-07-05-09** **Date: 21-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 18-06-2022

Type of Mix : BM (Bituminous Macadam)

Date of Test : 18-06-2022

Table 500-6 : Physical Requirements fo Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	14.1	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	13.2		
Strength	Aggregate Impact Value	20.2	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.3	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.4	Maximum 2%	IS:2386 Part III

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : **CP-RW-2022-07-05-09** **Date: 21-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 18-06-2022

Type of Mix : BM(Bitumnous Macadam)

Date of Test : 18-06-2022

Type of Binder : 60/70

% of Binder Used : 5.0%

Weight of Aggregate : 200.0 gm

Weight of Binder : 10.0 gm

Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 21-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	18-06-2022
Type of Mix	:	BM (Bituminous Mecadam)
Date of Test	:	18-06-2022

The results of the tests conducted on the Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	15.06	10.73	9KN(Min)
2	Marshal flow at 60°C, mm	2.62	2.46	2-4
3	Percent air Voids	4.24	3.44	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.65	13.17	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.70	72.58	65-75
6	Density, g/cc	2.40	2.41	–

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2022-07-05-09** **Date: 29-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Date of Receipt : 28-06-2022

Type of Mix : BM (Bituminous Macadam)

Date of Test : 28-06-2022

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	507	507
2	Weight of the sample After extraction	B	482	485
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.93	4.34
4	Average percentage	%	4.64	

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R RUDRAPRASAD
Authorized Signatory
Technical Manager

AEE (VRP) SD

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Lab ID : **CP-RW-2022-07-05-09** **Date: 29-06-2022**

AFTER EXTRACTION(Trail-1)

Weight of Sample : 482 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	10	9.64	2.0	98.0	90-100
13.2	53	62.66	13.0	87.0	56-88
4.75	337	400.06	83.0	17.0	16-36
2.36	39	438.62	91.0	9.0	4-19
0.3	19	457.9	95.0	5.0	2-10
0.075	24	482	100.0	0.0	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	29.1	29.1	6.0	94.0	90-100
13.2	92.15	121.25	25.0	75.0	56-88
4.75	247.35	368.6	76.0	24.0	16-36
2.36	43.65	412.25	85.0	15.0	4-19
0.3	24.25	436.5	90.0	10.0	2-10
0.075	19.4	455.9	94.0	6.0	0-8

* The results obtained are satisfactory as per standard requirements.

Note:-

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Technical Manager

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2022-07-05-09** **Date: 25-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-06-2022

Type of Mix : BC-Plant (Bituminous Concrete)

Date of Test : 23-06-2022

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 26-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	23-06-2022
Type of Mix	:	BC(Bitumenous Concrete)
Date of Test	:	23-06-2022

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2022-07-05-09**	**Date: 26-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.	
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032	
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	23-06-2022	
Type of Mix	:	BC (Bituminous Concrete)	
Date of Test	:	23-06-2022	

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 26-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	23-06-2022
Type of Mix	:	BC (Bituminous Concrete)
Date of Test	:	23-06-2022

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : **CP-RW-2022-07-05-09** **Date: 04-07-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Date of Receipt : 02-07-2022

Type of Mix : BC (Bituminous Concrete)

Date of Test : 02-07-2022

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	471	472
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.80	5.60
4	Average percentage	%	5.7	

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Lab ID : **CP-RW-2022-07-05-09** **Date: 04-07-2022**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 471

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.8	62.2	53-71
2.36	88	266	56.5	43.5	42-58
1.18	29	295	62.6	37.4	34-48
0.6	11	306	65.0	35.0	26-38
0.3	46	352	74.7	25.3	18-28
0.15	45	397	84.3	15.7	12-20
0.075	55	452	96.0	4.0	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.7	62.3	53-71
2.36	88	266	56.4	43.6	42-58
1.18	29	295	62.5	37.5	34-48
0.6	11	306	64.8	35.2	26-38
0.3	46	352	74.6	25.4	18-28
0.15	45	397	84.1	15.9	12-20
0.075	55	452	95.8	4.2	4-10

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID : **CP-RW-2022-07-05-09** **Date: 13-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer's Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 11-06-2022

Sample Type : Bitumen

Reference to BIS codes : IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)

Date of Test : 11-06-2022

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**64**	60 to 70
2	Softening Point, °C	**51.2**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

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DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2022-07-05-09** **Date: 04-07-2022**
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference : BBMP/EE/BTP/WO/21/2022-23
Sample Condition : Satisfactory
Date of Receipt : 02-07-2022
Type of Mix : Tack coat
Date of Test : 02-07-2022

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 08-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-2022
Type of Mix	:	WMM (Wet Mix Macadam)
Date of Test	:	06-06-2022
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	345	345	3.1	96.9	95-100
22.4	2329	2674	24.3	75.7	60-80
11.2	2379	5053	45.9	54.1	40-60
4.75	2373	7426	67.5	32.5	25-40
2.36	1621	9047	82.2	17.8	15-30
0.6	623	9670	87.9	12.1	8-22
0.075	1208	10878	98.9	1.1	0-5

* The results obtained are satisfactory as per standard requirements.

Note:-

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Quality Manager

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 08-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-2022
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	06-06-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

* The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 08-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-06-2022
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	06-06-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2022-07-05-09** **Date: 20-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 18-06-2022

Type of Mix : BM-Plant (Bituminous Macadam)

Date of Test : 18-06-2022

Weight of Sample(gm) : 5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	300	300	6.0	94.0	90-100
13.2	1350	1650	33.0	67.0	56-88
4.75	2500	4150	83.0	17.0	16-36
2.36	350	4500	90.0	10.0	4-19
0.3	50	4550	91.0	9.0	2-10
0.075	100	4650	93.0	7.0	0-8
PAN	350	5000	100.0	0.0	0

* The results obtained are satisfactory as per standard requirements.

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 21-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-06-2022
Type of Mix	:	BM (Bituminous Macadam)
Date of Test	:	18-06-2022

Table 500-6 : Physical Requirements fo Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	14.1	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	13.2		
Strength	Aggregate Impact Value	20.2	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.3	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.4	Maximum 2%	IS:2386 Part III

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2022-07-05-09**	**Date: 21-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.	
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032	
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	18-06-2022	
Type of Mix	:	BM(Bitumnous Macadam)	
Date of Test	:	18-06-2022	
Type of Binder	:	60/70	
% of Binder Used	:	5.0%	
Weight of Aggregate	:	200.0 gm	
Weight of Binder	:	10.0 gm	
Temperature of water bath	:	40°C	

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 21-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	18-06-2022
Type of Mix	:	BM (Bituminous Mecadam)
Date of Test	:	18-06-2022

The results of the tests conducted on the Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	15.06	10.73	9KN(Min)
2	Marshal flow at 60°C, mm	2.62	2.46	2-4
3	Percent air Voids	4.24	3.44	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.65	13.17	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.70	72.58	65-75
6	Density, g/cc	2.40	2.41	–

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2022-07-05-09**	**Date: 29-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.	
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032	
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	28-06-2022	
Type of Mix	:	BM (Bituminous Macadam)	
Date of Test	:	28-06-2022	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	507	507
2	Weight of the sample After extraction	B	482	485
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.93	4.34
4	Average percentage	%	4.64	

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Lab ID : **CP-RW-2022-07-05-09** **Date: 29-06-2022**

AFTER EXTRACTION(Trail-1)

Weight of Sample : 482 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	10	9.64	2.0	98.0	90-100
13.2	53	62.66	13.0	87.0	56-88
4.75	337	400.06	83.0	17.0	16-36
2.36	39	438.62	91.0	9.0	4-19
0.3	19	457.9	95.0	5.0	2-10
0.075	24	482	100.0	0.0	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	29.1	29.1	6.0	94.0	90-100
13.2	92.15	121.25	25.0	75.0	56-88
4.75	247.35	368.6	76.0	24.0	16-36
2.36	43.65	412.25	85.0	15.0	4-19
0.3	24.25	436.5	90.0	10.0	2-10
0.075	19.4	455.9	94.0	6.0	0-8

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2022-07-05-09** **Date: 25-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-06-2022

Type of Mix : BC-Plant (Bituminous Concrete)

Date of Test : 23-06-2022

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2022-07-05-09**	**Date: 26-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.	
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032	
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	23-06-2022	
Type of Mix	:	BC(Bitumenous Concrete)	
Date of Test	:	23-06-2022	

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2022-07-05-09**	**Date: 26-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.	
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032	
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	23-06-2022	
Type of Mix	:	BC (Bituminous Concrete)	
Date of Test	:	23-06-2022	

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-05-09** **Date: 26-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference	:	BBMP/EE/BTP/WO/21/2022-23
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	23-06-2022
Type of Mix	:	BC (Bituminous Concrete)
Date of Test	:	23-06-2022

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : **CP-RW-2022-07-05-09** **Date: 04-07-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032

Customer Reference : BBMP/EE/BTP/WO/21/2022-23

Source of Sample : Sample supplied by Agency

Date of Receipt : 02-07-2022

Type of Mix : BC (Bituminous Concrete)

Date of Test : 02-07-2022

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	471	472
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.80	5.60
4	Average percentage	%	5.7	

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Lab ID : **CP-RW-2022-07-05-09** **Date: 04-07-2022**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 471

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.8	62.2	53-71
2.36	88	266	56.5	43.5	42-58
1.18	29	295	62.6	37.4	34-48
0.6	11	306	65.0	35.0	26-38
0.3	46	352	74.7	25.3	18-28
0.15	45	397	84.3	15.7	12-20
0.075	55	452	96.0	4.0	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.7	62.3	53-71
2.36	88	266	56.4	43.6	42-58
1.18	29	295	62.5	37.5	34-48
0.6	11	306	64.8	35.2	26-38
0.3	46	352	74.6	25.4	18-28
0.15	45	397	84.1	15.9	12-20
0.075	55	452	95.8	4.2	4-10

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Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2022-07-05-09**	**Date: 13-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.	
Agency	:	Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032	
Customer's Reference	:	BBMP/EE/BTP/WO/21/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	11-06-2022	
Sample Type	:	Bitumen	
Reference to BIS codes	:	IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)	
Date of Test	:	11-06-2022	

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**64**	60 to 70
2	Softening Point, °C	**51.2**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

* The results obtained are satisfactory as per standard requirements.

Note:-

The results pertain to the samples received and tested.
All information Furnished by Customer/ Representative
Any correction in the report will make this report invalid.
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

AEE (VRP) SD

****End of Report****

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
WATER TESTING | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2022-07-05-09** **Date: 04-07-2022**
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Prakruthi Layout and Surrounding Area in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.
Agency : Sri. Jyothi Reddy, No:81, A Block Kaverinagara, R T Nagar Post, Bangalore-560032
Customer Reference : BBMP/EE/BTP/WO/21/2022-23
Sample Condition : Satisfactory
Date of Receipt : 02-07-2022
Type of Mix : Tack coat
Date of Test : 02-07-2022

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

Note:-
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